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GENERAL STUDIES (TEST CODE : 1432)

Name of Candidate	HARSHIT KUMAR		
Medium Eng./Hindi	ENGLISH	Registration Number	315262
Center	ORN	Date	16/7/19

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

16-B, 2nd Floor, Above National Trust Building, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp Punjab & Sindh Bank), Dr. Mukherjee Nagar Delhi- 110009

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

Don't write anything this margin (इस भाग में कुछ ना लिखें)

1. Explaining the reasons behind India's lower female labour force participation rates (LFPR), list the steps that have been taken to augment it. What more needs to be done? **(150 Words) 10**

भारत की निम्न महिला श्रमबल भागीदारी दर (LFPR) के पीछे उत्तरदायी कारणों को स्पष्ट करते हुए, इसे बढ़ाने हेतु उठाए गए कदमों को सूचीबद्ध कीजिए। साथ ही, बताइए कि इस दिशा में और क्या किए जाने की आवश्यकता है?

India ranks 108 in World Economic Forum's Gender Gap Index owing to its abysmal performance in economic participation.

Reasons for low female labour participation

① It has been seen that with increase in household income, Females tend to stay at home. [Economic Survey].

② Increasing income also leads to more enrolment of females in education. [Economic Survey].

③ Mechanisation of Agriculture → has led to women being unable to perform agriculture

④ Social evils like Caste [upper castes → did not allow women to step outside to earn] and eve teasing, sexual harassment, women safety.

⑤ No place to leave children → advent of

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nuclear families.

The Government has taken multiple steps:-

① Maternity Benefit Act - paid leaves for upto 26 weeks + no loss in seniority

② Creches at workplace with 50+ employees.

③ Vishakha guidelines + Sexual Harassment at workplace Act.

④ Equal remuneration Act - to target the wide pay gap

⑤ Enrolment fees, form fees is removed for women candidates to enable participation.

⑥ Various scholarships like Nai Udaan etc for minority women.

Conclusion

Christian Lagarde, IMF Chief had pointed out that if economic participation of woman in India matches that of men, Our GDP would increase by 26% points.

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2. By rebalancing project risks between the public and private sectors, the HAM model has encouraged investments in the road infrastructure sector. Discuss. **(150 words) 10**

सार्वजनिक और निजी क्षेत्रकों के मध्य परियोजना जोखिमों को पुनर्संतुलित कर, HAM मॉडल ने सड़क अवसंरचना क्षेत्रक में निवेश को प्रोत्साहित किया है। चर्चा कीजिए।

HAM model refers to Hybrid Annuity Model of Investment wherein the risks, rewards and responsibility are shared equally between the private & public sector.

ReBalancing

① BOT (Build Operate Transfer) → high risk on Public ~~Private~~ Sector

② EPC [Engineering Procurement Construction] high risk on private sector

HAM tends to balance the two.

① 40% payment is made upfront as the construction is done by the private sector.

② 60% → rest of the payment in terms of annual payments based on performance of the project.

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Advantages of HAM:-

① It is mostly a win-win situation with risk-rewards balanced.

② Payments are performance, quality based - private contractor accountable for a longer time period.

③ Used extensively in India - Highways (Bharatmala, Sagarmala), bridges [Cherani-Nashri) etc

Disadvantages

① Delayed payments might drive off many private contractors.

② Almost exclusive to highways only

Hybrid Annuity Model has shown its potential in India. It has led to fast and efficient laying down of new infrastructure. It should be readily extended to other sectors as well

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3. Examine the need for a comprehensive policy on e-commerce in view of its domestic expansion as well as safeguarding India's interests globally. **(150 words) 10**

ई-कॉमर्स पर एक व्यापक नीति की आवश्यकता का इसके घरेलू विस्तार के साथ-साथ वैश्विक स्तर पर भारत के हितों की सुरक्षा को देखते हुए परीक्षण कीजिए।

E-Commerce in 2015-16 was valued at $20 Billion and is projected to reach $200 Billion by 2020. Thus, it has seen tremendous growth (10 times)

Need for e-commerce policy

① It is a very fast growing sector [20B → 200B$ in 4 years]

② India is a big market. [1 Billion + customers]

③ Issue that the ecommerce is dominated by few countries + few corporation

US, China — Alibaba, Amazon

④ Urgent need to protect Small Retailers which can not compete with predatory pricing, deep discounts etc.

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(5) E-commerce is a gold mine of data - in light of GDPR [EU], Data Localisation circular [by RBI]. There is a need to look at commercialisation of data

(6) The policy, which is to be launched by mid-2020 has to have an onus to prevent monopolisation.

Eg. Current e-commerce rules allow 100% FDI in ecommerce → Marketplace Model Automatic route and do not allow any FDI through inventory model in order to protect small retailers.

(5) Empower competition commission of India to prevent unfair practices etc

The historic rise of Ecommerce marked by monopoly of a few corporations threatening small businesses has to be made to prevent Indian interests at WTO as well as flourishing trade by Indian Startups / retailers

Don't write anything this margin (इस भाग में कुछ ना लिखें)

4. In view of the growing significance of FinTech innovations, discuss the potential and challenges of mainstreaming FinTech in Indian economy. **(150 words) 10**

फिनटेक (FinTech) नवाचारों के बढ़ते महत्व को देखते हुए, भारतीय अर्थव्यवस्था में फिनटेक को मुख्यधारा में लाने की संभावनाओं और चुनौतियों पर चर्चा कीजिए।

FinTech relates to financial technology and the use of technology in finance field. The recent Bali Fintech Agenda discussed various potential as well as challenges.

Potential:-

① Decreased cases of financial frauds as everything would be automated, stored eg. Blockchain technology

② Offer faster as well as much efficient settlement of contracts
eg. T+ 72 days (before SEBI) → T+ 2 days (Now) → T+ 2 minutes [FinTech]

③ It will lead to growth in the GDP by above a percentage point

Don't write anything this margin (इस भाग में कुछ ना लिखें)

However, there are certain challenges as well.

① Cyber security - The country ranks very high in cyber attack vulnerability coupled with low digital literacy.

② Too much dependent on electricity and internet; The economy can be virtually shut if there is a prolonged loss of electricity and internet

③ Lack of awareness among the masses - We still lack financial inclusion and introducing technology would further bring strict stratification

Conclusion

While FinTech offers multiple potential and advantages and is highly successful in modern economies, ~~to~~ In India, its implementation must be done along with digital literacy campaigns to promote inclusive growth

Don't write anything this margin (इस भाग में कुछ ना लिखें)

5. With India striving to achieve its development objectives, examine how blue economy can help in pursuing the objectives of economic development and ecological sustainability. **(150 words) 10**

भारत द्वारा अपने विकास उद्देश्यों को प्राप्त करने के प्रयास में, परीक्षण कीजिए कि किस प्रकार नीली अर्थव्यवस्था आर्थिक विकास और पारिस्थितिकीय संधारणीयता के उद्देश्यों को प्राप्त करने में सहायता कर सकती है।

With a vast coastline of more than 7,500 Km, there is a lot of potential in exploring aquaculture, mariculture, fishing etc. for economic development.

How the blue economy can help.

① The recent Blue Economy Summit held in Nairobi, Kenya highlighted the ways to achieve sustainable growth using ~~blue~~ aquaculture

② It is yet an under developed sector with most fisherman using handboats ~~to~~ and fishing very close to the shore or in rivers only

Marine → 32% Only [Huge potential]
Riverine → 68%

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(3) Mariculture offers great potential [200 Nautical Miles EEZ]. If electric/diesel boats are provided

(4) NABARD setup FIDF [Fisheries Infrastructure Development Fund] to the tune of around ₹ 7,500 crores to develop Fisheries.

(5) Ashok Dalwai's Doubling the Farmers Income by 2022 also offers investment in allied sectors like Aquaculture to augment income.

(6) Fishery Development can help in Nutritional security as it is rich in Proteins [India → Carbohydrate heavy] and Iodine [prevent Goitre]

(7) If the focus is divided between Inland and Marine aquaculture - it will lead to ecological balancing as only one resource will not be exploited.

Fisheries thus offer immense potential to develop the economy while farmers and fishermen multiply their incomes

Don't write anything this margin (इस भाग में कुछ ना लिखें)

6. Reliance on borrowings for capital expenditure in railways reflects a weakening financial position. Comment on the statement and discuss ways in which better resource generation and utilisation can be achieved therein.

(150 words) 10

रेलवे में पूंजीगत व्यय के लिए उधारी पर निर्भरता कमजोर होती वित्तीय स्थिति को प्रतिबिंबिति करती है। इस कथन पर टिप्पणी कीजिए तथा उन उपायों पर चर्चा कीजिए जिनसे इसमें बेहतर संसाधन सृजन और उपयोगिता प्राप्त की जा सकती है।

The operating ratio of Indian railways remain very poor [~98%] reflecting little to no profitbility. and leading to ~~ead~~ borrowings for capital expenditures.

Reasons for weak financial position

① Since Independence, the passanger count has increased by as much as 16 times while the track length as multiplied by a factor of 4

② [heavy Cross Subsidies] → The passangers ticket costs are highly subsidised while being charged at cost of freight train (comparatively less in number)

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(3) Populist Policies - Trains being the lifelife of cities like Mumbai and of transport between ~~the~~ two places in the country. → Political leaders have shown lack of political will to increase fares of passengers]

(4) High staff → no retrenchment can take place. heavy unionisation in Railways.

Ways to better resource generation.

(1) Cross subsidies and populist policies have to go in order for the railways to earn.

(2) Railway Policy aims at atleast 95% Operating Ratio.

(3) Special Trains [Maharaja express, T18] with relatively high prices to target foreigners, upper class etc.

(4) Limited staff recruitment

(5) Manning of barriers - to avoid accidents and losses → pay compensation + loss of Capital Asset

Railways, being one of the largest public enterprise should aim for self sufficiency and asset generation

Don't write anything this margin (इस भाग में कुछ ना लिखें)

7. With water increasingly becoming a scarce resource, large scale adoption of micro irrigation techniques could prove to be a game changer in India. Analyse. Also enumerate various steps taken by the government to promote micro irrigation in India.

(150 words) 10

जल के उत्तरोत्तर दुर्लभ संसाधन बनते जाने के कारण, भारत में सूक्ष्म सिंचाई तकनीकों का व्यापक पैमाने पर अंगीकरण निर्णायक सिद्ध हो सकता है। विश्लेषण कीजिए। साथ ही, भारत में सूक्ष्म सिंचाई को बढ़ावा देने हेतु सरकार द्वारा उठाए गए विभिन्न कदमों को भी सूचीबद्ध कीजिए।

NASA in its recent reports pointed out that Groundwater in some parts of India [Haryana, Panjab] going down by 0.3 Metre/year.

and 2022 → Cities like Hyderabad, Chennai etc would become extinct of water resources

Thus, Microirrigation Systems in form of Water Sprinklers, Drip Systems, Deep Water Soil Moisturisers had been introduced via Pradhan Mantri Krishi Sinchai Yojana.

Potential

① Use very less water as compared to tubewell, or canal irrigation.

② Prevent Soil Salinization due to excess irrigation

③ Fertigation → Fertiliser + Irrigation can be done easily. No / little toxicity compared to spraying

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Some challenges are present:-

① High cost ③ Technical aspect not clear to poor farmer

② Regular maintaince - not provided though needed.

Steps taken by the Government:-

① Pradhan Mantri Krishi Sinchai Yojana:
'More Crop per Drop' + "Accelerated Irrigation Benefit Programme" → heavy investment on Microirrigation.

② NABARD - Long Term Irrigation Fund (LTIF) → ₹ 40,000 crore sanctioned in budget.

③ NABARD - Micro Irrigation Fund (MIF) Corpus Increased from ₹2000 Crore to ₹ 4000 Crore.

④ DD-KISAN - Awareness generation

The irrigation potential even at 100% efficiency can not cover the sown land → Thus, Micro Irrigation is the future of irrigation in India towards water saving and food security.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

8. Livestock farming not only contributes to climate change but is also affected by it. Elaborate the statement and discuss some measures that can be taken to make livestock farming more sustainable as well as resilient.

(150 Words) 10

पशुधन खेती (लाइवस्टॉक फार्मिंग) न केवल जलवायु परिवर्तन में योगदान देता है, बल्कि इससे प्रभावित भी होता है। इस कथन का सविस्तार वर्णन कीजिए और पशुधन खेती को अधिक संधारणीय के साथ-साथ लचीला (रिज़िल्यंट) बनाने हेतु उठाए जा सकने वाले कुछ कदमों की विवेचना कीजिए।

Livestock Farming relates to farming involving the keeping of animals like cattle, goats, hatchery etc.

Contribution to climate change

① Cows and Cattle → one of the largest source of Methane due to their digestive system [Cud].
Indian Nitrogen Assesment Report → Methane has replaced Nitrogen as second largest GHG in Agriculture.

② Hatcheries - run on Broilers → heat → warm up the surroundings → Global Warming → Climate Change.

③ Cattle, goats eat Grass → leads to desertification of Grassland

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Affected by Climate Change:-

① They are often the first victims of droughts [Marathwada, Vidharba]

② They are drown in climate change related floods.

③ Productivity decreases [milk, eggs] due to rise in temperatures, extreme events.

Measures to be taken:-

① Climate Smart Agriculture - related to Resilience of Agriculture to climate change

② Vaishno, Vedic Farming, ZBNF → to be adopted which uses livestock excrements to increase productivity

③ Precision Agriculture → carefully selecting breeds, feed, etc to make sure they remain resilient to Climate change

Ashok Dalwai Committees Doubling the Farmers Income by 2022 explicitly mentions livestock as one of the ways.

Thus, it needs to be grown adopted in a sustainable, climate resilient way

Don't write anything this margin (इस भाग में कुछ ना लिखें)

9. The cropping pattern of a region is influenced by geo-climatic, socio-cultural, economic, historical and political factors. Substantiate with relevant examples. **(150 words) 10**

किसी क्षेत्र का शस्य प्रतिरूप भू-जलवायविक, सामाजिक-सांस्कृतिक, आर्थिक, ऐतिहासिक और राजनीतिक कारकों से प्रभावित होता है। प्रासंगिक उदाहरणों के साथ पुष्टि कीजिए।

Cropping Pattern is highly influenced by various socio-economic and geographical factors. This can be seen as follows:

(1) GeoClimatic

a) Tea → requirement { 21-29°C, 150+ cm of rainfall, no standing water }

Thus, it is highly concentrated in Assam, upper reaches of West Bengal [Darjiling], Himachal Pradesh [Palampur].

b) Jute → requirement { warm climate, heavy water use, flowing water }

Heavily concentrated in Ganga-Brahmaputra Deltaic Area, Krishna Godavari Delta.

c) Cotton { black soil, frost free 210 days }

Present in Maharashtra [black soil]

(2) Socio-Cultural

i) ~~Areas of socio~~ Rice being the staple crop among South Indians → heavy paddy culture while Wheat being staple among North Indians

Don't write anything this margin (इस भाग में कुछ ना लिखें)

is not found beyond Madhya Pradesh (Durum Wheat)

③ Economic

The poorer farmers are related to coarse grains like Millets and Pulses [>70% pulses by dryland agriculturists] while prosperous farmers go for Wheat & Rice [MSP is high]

④ Historical

- Tea introduced in Darjiling by Britishers is still a flourishing Business
- Kesar in Kashmir Valley
- Indigo in Bihar

⑤ Political factors

The MSP (Minimum Support Price) has invariably led to agricultural distortion as farmers are more attracted towards high MSP offered by Government than sowing pulses etc.

Thus, it can be seen that cropping pattern is a derivative of multiple factors

Don't write anything this margin (इस भाग में कुछ ना लिखें)

10. A developed Inland Waterway Transport (IWT) will not only augment the overall transport capacity of the country, but also help correct the multi-modal transport mix. Discuss. **(150 words) 10**

एक विकसित अंतर्देशीय जलमार्ग परिवहन (IWT) न केवल देश की समग्र परिवहन क्षमता को बढ़ाएगा, अपितु इससे मल्टी-मॉडल परिवहन मिश्रण को सुधारने में भी सहायता मिलेगी। चर्चा कीजिए।

Inland Waterway Transport relates to transportation of people and goods using inland waterbodies and rivers. There are more than 100 National Waterways in India.

Augmenting Transport capacity :-

① Free of traffic jams i.e. faster transport.

② More efficient & cheaper.
1 HP on land → 500 kg.
1 HP in water → 5 Tons

③ environment friendly

④ efficient use of natural resources.

Augmenting Multimodal Transport Mix :-

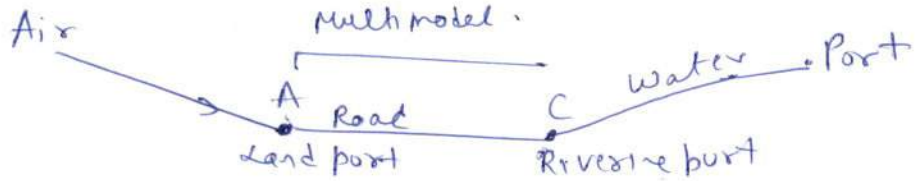
① It relates to having multiple modes of transport : air, water & road merging at a single port / station

① Jal Marg Vikas Project :- World

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Bank aided NW1: multimodal transport has been put in place. It is also the first Freight Village in India.

② Different modes of transport can converge and work in synergy for



faster and efficient logistics.

③ Due to Inland Transport, LADIS [Least Available Depth Information System] has been setup which would help in ~~Multido~~ multimodal operations

It can be clearly seen how Inland Waterway Transport ~~Ras~~ and multimodal transport are converging & can help each other in a mutualistic way

Don't write anything this margin (इस भाग में कुछ ना लिखें)

11. Can the consolidation of banks help in stemming the existing problems in the banking sector? Discuss. **(250 words) 15**

क्या बैंकों का समेकन बैंकिंग क्षेत्रक में वर्तमान समस्याओं से निपटने में सहायता कर सकता है? चर्चा कीजिए।

Consolidation of Banks relates to mergers and acquisition of smaller banking entities to form a much greater coglomerate.

The efficacy of bank Consolidation in India has been widely discuss:

In Favour of Consolidation:-

① Narsimhan Committee in 1991 recommended have 3-4 large banks and 10-11 smaller banks

② PJ Nayak Committee also called for bank consolidation.

③ Merger of SBI + 5 Associate banks + Bhartiya Mahila Bank is a success story.

④ Government is going for a merger between Vijaya Bank, Dena Bank & Bank of Baroda

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(5) It would be able to utilise the economies of scale..

(6) Reduced unhealthy competition between similarly placed banks.

(7) Higher ability to tackles NPAs and balance sheet problems.

(8) Able to take losses - augment the Capital Adequacy Ratio.

(9) No need for multiple branches in each village → Cost cutting.

(10) Higher management would be limited in number :- 1 CMD versus 5 CMDs (big banks) for 5 Smaller banks.

(11) It is the global practice as well

Don't write anything this margin (इस भाग में कुछ ना लिखें)

However, there are a number of issues :-

① The fall of these Systematically Important Domestic banks will lead to extensive effect on the economy → can stall growth.

② End of competition can lead to monopolisation.

③ Human Resource Issue → Voluntary Retirement etc → issue needs to be addressed.

④ No guarantee of NPAs decreasing

Bank Consolidation offers an attractive opportunity to have global level banks which can absorb losses and accelerate growth. However, there remains a systemic as well as a moral hazard towards fall of a big bank and the belief that it would bring down NPAs

Don't write anything this margin (इस भाग में कुछ ना लिखें)

12. Why has the contribution of manufacturing sector, as a percentage of the GDP, remained stagnant in the recent years? In this context, analyse the achievements of National Manufacturing Policy, 2011 with regards to its intended objectives. **(250 words) 15**

विगत वर्षों में GDP के प्रतिशत के रूप में विनिर्माण क्षेत्रक का योगदान स्थिर क्यों रहा है? इस संदर्भ में, अपने लक्षित उद्देश्यों के संबंध में राष्ट्रीय विनिर्माण नीति, 2011 की उपलब्धियों का विश्लेषण कीजिए।

Manufacturing sector is generally associated with high labour intensity and a healthy proportion of GDP. However, in India, despite various reforms: it has remained below 25% of GDP

Reasons for contribution being stagnant:

① Pre 1991 - There were issues of

① Regulation
② Licensing — led to monopolisation
③ Control - and low industrial growth
④ Reservation -

② Post Liberalisation

① Concentration of workers in Agriculture - marked by disguised unemployment + lack of income & productivity

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(2) Quick shift to service sector skipping manufacturing sector :-

a) Boom in IT & ITES - Service & Mode 4 exports : Infosys etc came up

b) Ready to be trained workforce

c) English speaking workforce chose service sector.

(3) Manufacturing sector had several defects

a) Lack of Ease of Doing Business :

We have improved immensely from 142 (2015) to 77 (2018) in world Bank's index - still → lack of Ease of Doing Business

b) Labour laws → lack of easy retrenchment policies.

c) Red Tapism.

d) Problems in land acquisition - Land Acquisition Act 2013 → very stringent.

e) Unskilled labour.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

National Manufacturing Policy '2011.

① Increase contribution of Manufacturing sector to 25% of GDP

② 10 Crore jobs in Manufacturing sector.

③ Improve skills of labour, enable environment of setting up of Industries.

This policy was unable to achieve its objectives: GDP contribution around 22% while having jobless growth.

The policy was again reinforced by Make in India '2015 which identified 25 sectors of Manufacturing Growth Potential.

It can be seen that to increase our GDP, GDP Growth, tackle jobless growth. It is important to make manufacturing sector efficient & skilling the labour, relaxed labour laws, SEZs, NIMZ etc.

Don't write anything this margin
(इस भाग में कुछ ना लिखें)

13. One of the goals that a developing economy aspires for is to bring down the Incremental Capital-Output Ratio (ICOR). In this context, what are the constraints that underlie the efficient conversion of savings rate to investments in the Indian economy? Also suggest some measures to improve this efficiency. **(250 words) 15**

एक विकासशील अर्थव्यवस्था जिन लक्ष्यों की आकांक्षा रखती है उनमें से एक वृद्धिशील पूंजी-उत्पाद अनुपात (इंक्रीमेंटल कैपिटल-आउटपुट रेश्यो: ICOR) में कमी लाना है। इस संदर्भ में, भारतीय अर्थव्यवस्था में बचत दर के निवेश में कुशल रूपांतरण के समक्ष आने वाली बाधाएँ क्या हैं? साथ ही, इसकी कुशलता में सुधार हेतु कुछ उपायों का भी सुझाव दीजिए।

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Don't write anything this margin (इस भाग में कुछ ना लिखें)

14. Highlight the factors responsible for rise in the number of start-ups in India in recent years. Analyzing the challenges in the existing start-up ecosystem, suggest some measures to resolve them. **(250 words) 15**

विगत वर्षों में भारत में स्टार्ट-अप की संख्या में वृद्धि के लिए उत्तरदायी कारकों पर प्रकाश डालिए। वर्तमान स्टार्ट-अप पारितंत्र की चुनौतियों का विश्लेषण करते हुए, उनका समाधान करने हेतु कुछ उपायों का सुझाव दीजिए।

Start Ups: is defined by Department of ~~Industry~~ Promotion of Industry and ~~Industry~~ Internal Policy (DPIIT) as a business venture with turnover less than 100 crore and set up less than 10 years ago. or

Factors responsible for rise in Start Ups

① Global Phenomena: - The recent times throughout the world [US, Europe, China] are marked by a considerable growth in startups

② Aspiring Youth moving away from traditional models of living - Startups in India are usually a phenomena

Don't write anything this margin (इस भाग में कुछ ना लिखें)

among the younger section

(3) Conducive policies by the Government right from childhood to startup management

a) Atal Innovation Mission
b) Smart India Hackathon
c) Start Up India
d) Stand Up India
e) Tax breaks for Startups
f) Incubation Centres

(4) Presence of Capitalists (Angel Investors) (VGF) to fund & accelerate startups.

Challenges

(1) Lack of Innovation - Simply copying foreign startups

(2) Angel Tax Issue → Flat rate of 30.9% on Angel Investments.

(3) Startups being used for Money Laundering

(4) 'Fair Value' method of accounting versus 'Cash Flow Model'.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Measures to Resolve challenges

① Have a conducive environment since childhood towards entrepreneurship.

② Angel Tax Issue : Department of Commerce.
exempted in various cases like
→ Turnover above 250 crore of Investor
→ Investment below 100 Cr → no tax.
→ No tax if not used for buying car 10 lakhs
→ immovable property

③ Stop raiding startups & use technology to find out Money Laundering etc like Operation Clean Money, Shell Companies etc.

④ Tax Break in Budget 19-20
StartUps thus have immense potential to accelerate economic growth and provide employment opportunities in this era of jobless growth. Thus, the Government should provide impetus to their growth by giving Tax Breaks, ease of doing business etc

Don't write anything this margin (इस भाग में कुछ ना लिखें)

15. There is a high cost of compliance as well as complexities associated with existing labour laws at centre and state levels. Discuss. What steps have recently been taken by the central government to address these challenges? **(250 words) 15**

केंद्र और राज्य स्तरों पर वर्तमान श्रम कानूनों के साथ अनुपालन की उच्च लागत के साथ-साथ जटिलताएँ भी जुड़ी हुई हैं। चर्चा कीजिए। इन चुनौतियों से निपटने के लिए केंद्र सरकार द्वारा हाल में क्या कदम उठाए गए हैं?

Labour law complexities have been sighted as a major reason towards unsustainable, low growth of Manufacturing sector in our country.

Issues: [Compliances & complexities]

① Strict Retrenchment laws: If the number of workers exceed 100 → need permission from Government to remove workers.

② Minimum Pay: It is not clearly defined and leads to exploitation of labour

③ Social Security, Industrial health: lack of proper laws and their implementation have led to loss of lives and bad health of workers.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(4) No fixed Term employment upto recently:
The industrialists avoided hiring → Jobless growth.

(5) Unskilled labour
Recent step taken:

(1) Fixed Term Employment Rules

The labour ministry has extended fixed term employment to all sectors [previously limited to apparel & textiles]

(2) Retrenchment Policies: Various states have modified their policies for easy hire & fire:

eg Rajasthan: 100 to 400 workers;

(3) National Minimum Wage
to be statutorily set Punishment for having wages below it

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(4) Labour Code [4 in number] have been introduced [44 laws → 4 Code]

a) Labour code on Wages
b) Labour code on Social security
c) Labour Code on health
d) Labour Code on Industrial Relations.

(5) Champion Sectors identified by NITI Aayog: Textile, Footwear → sops for employment generation.

(6) PM Kaushal Vikas Yojana - for Skilling

Manufacturing sector remains the employment driving sector of the economy and this lack of proper labour laws had led to low hiring or exploitation of labour. The Government has identified the specific lacunas and is attempting to accelerate growth in the sector.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

16. The contribution of coal based power generation is not expected to substantially go down in the next few decades, despite growing importance of renewables. Comment on the statement in light of increasing demand for power in India. **(250 words) 15**

नवीकरणीय संसाधनों के बढ़ते महत्व के बावजूद, कोयला आधारित विद्युत उत्पादन के योगदान में अगले कुछ दशकों में मूलतः कमी आने की उम्मीद नहीं है। भारत में विद्युत की बढ़ती मांग के आलोक में इस कथन पर टिप्पणी कीजिए।

Coal based power Generation accounts for more than 60% of the total power generated today.

Growing importance of Renewable:

① INDC targets to UNFCCC:

a) 175 GW of Renewable energy
[100 GW - Solar · 60 GW → Hydro
10 GW Biomass 5 GW → Small hydro]

b) 40% renewable energy by 2022

② International solar Alliance: World's biggest Solar Park in India

③ Sustainable Growth and India's commitment to Paris Agreement.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

However, due to various factors. demand for power is increasing:

① Schemes like Deen Dayal Upadhyay Gram Jyoti Yojana, UJALA, Saubhagya i.e. Universal Electrification has Increased power demand.

② Explosion in Population.

③ Cooling Requirements in near future.

④ Prosperity / Development in India
→ the demand in increasing.
(a) Manufacturing
(b) Irrigation
(c) households
→ Increase in demand.

⑤ Government push to electric vehicles (FAME) → Increase in demand.

While India's net demand for power will remain greatly below the world Average of developed

Don't write anything this margin (इस भाग में कुछ ना लिखें)

countries. It would still be beyond the potential of renewable energy that we would ~~consider~~ be able to generate.

Moreover, we have adequate coal fields [Raniganj, Jharia] which offer cheaper electricity, employment etc.

Conclusion

It can be seen that while India is highly committed towards its climate pledges [Paris pledge], it is impossible for India to limit coal based power generation to a great extent as our ~~production~~ capacity is only around 160 GW while demands exceeds it by a huge margin.

The Indian INDC to achieve 40% renewable power mix is a step in the right direction

Don't write anything this margin (इस भाग में कुछ ना लिखें)

17. Elaborate the strategic and operational elements of the Agriculture Export Policy, 2018 and discuss the role it can play to achieve the target of doubling farmers' income by 2022. **(250 words) 15**

कृषि निर्यात नीति, 2018 के रणनीतिक एवं परिचालन-संबंधी तत्वों का सविस्तार वर्णन कीजिए और 2022 तक किसानों की आय को दोगुना करने के लक्ष्य को प्राप्त करने में इसके द्वारा निभायी जा सकने वाली भूमिका की विवेचना कीजिए।

Agricultural Export Policy 2018

① Increase the exports of Indian Agriculture from $30 Billion to $60 Billion (2022) and finally to 100 B $.

② Diversify — markets / export basket

③ Double the farmer Income by 2022

④ Adequately deal with SPS - Sanitary and Phyto Sanitary Mechanism of WTO.

⑤ Increase exports via Food Processing and value addition.

⑥ Investment in Organic agriculture & export.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Role of Agricultural Export Policy in Doubling Farmers Income :

① Prices available in foreign market is much higher than available locally due to Purchasing Power Parity.

② Several Indian exports have been restricted due to SPS. (Indian Mangos) Thus, addressing this issue would lead to seamless exports.

③ Food Processing & Value addition [Fruit → Jam] increases the worth as well as the shelf life of product

④ The Indian Agricultural export [Basmati Rice, mangoes) is relatively inelastic → fixed Income

Don't write anything this margin (इस भाग में कुछ ना लिखें)

The focus is on diversifying the export basket → horticulture [apples, oranges [Nagpur - GI], tea etc].

(5) The traditional exports have been to modern-western countries. The policy aims at diversifying markets as well → Africa [Prosperity is coming] West Asia etc.

(6) There is great demand of Organic Food in western countries. National Programme on Organic Production (NPOP) has to be strengthened. → Rgl certification → better price delivery.

The Agricultural Export Policy is a right step in the direction towards doubling farmers income. However, the exports should not be limited only to well off - rich farmers but be inclusive of small & marginal farmers & FPOs as well

Don't write anything this margin
(इस भाग में कुछ ना लिखें)

18. Write a brief note on 'Dry Ports' and their significance in mitigating logistic challenges in India. Also, discuss the challenges in their development and measures needed to address them. **(250 words) 15**

भारत में लॉजिस्टिक्स की चुनौतियों को कम करने में 'शुष्क पत्तनों' एवं उनके महत्व पर एक संक्षिप्त टिप्पणी लिखिए। साथ ही, उनके विकास में आने वाली चुनौतियों और उनके समाधान हेतु आवश्यक उपायों पर चर्चा कीजिए।

Dry Ports: relates to a geographical place wherein all the functions of traditional ports: handling, loading, unloading etc is done at land itself. They are far away from waterbodies.

Worldwide, close to 70% functions of port take place at Inland port while India's share of function in Dry Ports is abysmally low

Significance of Dry Ports:

① Most production centres in India [eg. Ludhiana, Manesar, Bangalore] are located Inland far away from sea ports.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(2) In absence of transportation by waterways → the transportation costs are very high to water ports.

(5) ~70% logistic handling at worldwide level takes place at inland ports.

(7) Ports in India are overly crowded → take pressure off.

(8) Labour is easily available.

Challenges

(1) Heavy Investment is needed as it is a capital intensive sector.

(2) Lack of multimodal transport links would render it inefficient

(3) Over-reliance on water based ports in India.

(4) High railway freight charges due to cross subsidisation

Don't write anything this margin (इस भाग में कुछ ना लिखें)

⑤ High taxes on Airline Turbine Fuel (ATF)

Measures needed to address:-

① Development of Multimodal Transport Linkages (eg. Varanasi)

② InViTs - Investment Trust Model can be used to gather funds to develop.

③ Employing Global Best Practices in Dry Ports.

④ Developing freight corridors and Inland Water Transport

Dry Ports thus offer huge potential in decreasing logistic cost (to 10% against 14%), increase employment and investment. The Government can come up with a policy to develop land based ports

Don't write anything this margin (इस भाग में कुछ ना लिखें)

19. Development of food processing industry will help in achieving the twin goals of inclusive growth and food security. Discuss. Also, account for the competitive advantages enjoyed by India in the food processing sector.
(250 words) 15

खाद्य प्रसंस्करण उद्योग के विकास से समावेशी विकास और खाद्य सुरक्षा के दोहरे लक्ष्यों को प्राप्त करने में सहायता मिलेगी। चर्चा कीजिए। साथ ही, खाद्य प्रसंस्करण क्षेत्रक में भारत को प्राप्त प्रतिस्पर्धात्मक लाभ का भी विवरण दीजिए।

Food Processing industry is related to Value addition in traditional food to increase its shelf life, nutrition, taste, ~~and~~ portability. This is complemented by a rise in income of the farmer.

It is a driver of achieving the twin objective ~~goo~~ goals.

① INCLUSIVE GROWTH

a) Ashok Dalwai's Report: Doubling the Farmer's Income by 2022 focuses on food processing industry to augment incomes of our poor farmers

b) PM SAMPADA Yojana, Mega Food Park Scheme make available to the

Don't write anything this margin (इस भाग में कुछ ना लिखें)

poor farmer, various institutional and infrastructural resources like cold chain storage etc which were hitherto inaccessible to the marginal-small farmer → Inclusive Growth.

c) Government Agricultural Export Policy also aims at improving the price delivery via food processing.

d) Processed Food → Fortification is possible → poor eat it [Mid Day Meal] → Human Capital Enhancement → Inclusive Growth

Food Security

① Food processing increases the shelf life of the product → decreased wastage of food → more accessibility

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(2) Food processing enables food fortification
- Iodine, folic Acid, Iron, Vitamin A
→ targets hidden nutrition

(3) makes the food appealing to kids → food security ensured.

Comparative Advantage with India

(1) It is a sunshine sector in India
CAGR - 12-13%. 200$ to grow to 1 Trillion Dollar (potential).

(2) India has excess food → wasted → can be processed and exported.

(3) All varieties of food, vegetable, fruits available in India.

(4) Workforce to work in food processing factories → shift from disguised unemployment in Agriculture.

Food Processing Industry is highly promising sector with unprecedented growth potential.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

20. Identify the problems faced by Indian agriculture as a consequence of changing land holding pattern as witnessed in the findings of Agriculture census, 2015-16. In light of these problems, suggest suitable ways to resolve such structural issues in agriculture. **(250 words) 15**

जैसा कि कृषि संगणना, 2015-16 के जाँच परिणामों में देखा गया है, परिवर्तनशील भू-धारण प्रतिरूप के परिणामस्वरूप भारतीय कृषि के समक्ष आने वाली समस्याओं की पहचान कीजिए। इन समस्याओं के प्रकाश में, कृषि में ऐसे संरचनात्मक मुद्दों का समाधान करने के लिए उपयुक्त उपायों का सुझाव दीजिए।

Agriculture Census held by Agriculture Ministry once in 4 years came up with interesting results:

① Operational holdings (in numbers) have increased.

② Fragmentation of farms have taken place.

③ Increased feminisation of Agriculture

④ Increase in small & marginal farmer decrease in big farmers (>5 Ha)

⑤ Land holdings of SC-ST down.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Problems

① Less productivity owing to higher population pressure.

② Inability to shift from agriculture to other sectors of the economy.

③ Male migration → feminisation of Agriculture → no conclusive rights with women → unable to take help of Government schemes

④ Mechanisation becomes difficult due to ~~shrinkage~~ smaller land holdings

⑤ SC-STs being further exploited.

Ways to Resolve

① Urgent need to move people out of agriculture into manufacturing or services

PM Kaushal Vikas Yojana - skill people

Don't write anything this margin (इस भाग में कुछ ना लिखें)

coupled with Make in India;

② Digitalisation of land records to give conclusive rights to women → prevent exploitation.

③ Consolidation of farmland - to be able to have remunerative farming & be able to afford mechanised agriculture.

④ Increase productivity of land via PM Krishi Sinchai Yojana, Soil health Card, Krishonnati Yojana - Green Revolution etc.

The Indian Agriculture scene is marked by overpopulation of farmers and constant fragmentation with each generation. The Government must take active steps to shift focus from agriculture to other sectors

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GENERAL STUDIES (TEST CODE : 1436)

Name of Candidate	HARSHIT KUMAR		
Medium Eng./Hindi	ENGLISH	Registration Number	315262
Center	ORN	Date	17/08/19

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

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All the Best

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1. Given the growing ecological and geopolitical significance, Arctic region offers immense opportunities for serving India's long-term interests. Discuss. **(150 words) 10**

बढ़ते पारिस्थितिक और भू-राजनीतिक महत्व के आलोक में, आर्कटिक क्षेत्र भारत के दीर्घकालिक हितों की पूर्ति हेतु व्यापक अवसर प्रस्तुत करता है। चर्चा कीजिए।

Arctic Region refers to the topmost part of the Globe bound by countries like USA, Russia, Denmark, Norway, Sweden, Finland etc.

Growing ecological & geopolitical significance

① Ice sheet is fast receding. Thus

a) New sealanes are being opened.

b) Vast Resources - oil, natural gas, methane hydradates are being identified to be mined.

② China - under its flagship Belt and Road initiative recently came up with Arctic Road White paper.

③ Arctic Council - informal grouping of

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Northern most countries are gaining significance

Opportunities for India

① Vast resources like oil and natural gas can be exploited

② INSTC, Ashgabat Agreement which are today limited to Baltic sea can be further expanded to cross the Arctic

③ It can be effectively used to counter China's growing influence - Pearl of String Strategy - Arctic White Paper.

Arctic region is a manifestation of changing ecology resulting into dynamic geopolitics. Active diplomacy & military ties with US, Russia, Denmark would prove helpful to India for containing the Dragon i.e. China

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2. Discuss the challenges that India may face in the eventuality of withdrawal of US troops from Afghanistan. What options does India have to safeguard its interests in the context of the changing situation? **(150 words) 10**

अफगानिस्तान से अमेरिकी सैनिकों की वापसी की स्थिति में भारत के समक्ष आ सकने वाली चुनौतियों पर चर्चा कीजिए। परिवर्तित होती परिस्थितियों के संदर्भ में भारत के पास अपने हितों की रक्षा करने के लिए कौन-से विकल्प हैं?

Changing the previous stance of AfPak policy of USA, marked by continued fight till win. The new Afghan policy relates to detrooping upto 50% of total American boots in Afghanistan.

Challenges that may be faced by India:

i) Rise of Taliban: Taliban still holds a considerable territory and political stake in the region. Withdrawal of troops can aggressively harm Indian Interests

ii) Harm to Infrastructure - like Salma Dam, Afghan-Parliament, Zaranj-Delaram Highway can be targetted as Taliban is anti Afghan

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Government.

iii) Strengthening of State backed terror. RAW reports intermeshes between ISI (Pakistan's Deep State) and Taliban leadership

iv) Trade ties - Air Trade (Heart of Asia Summit '2016), APTTA, can be severely effected.

Options with India

① Indulge in talks with Taliban leadership via [Moscow Talks]. We can further take it to official level as ~~only~~ ex diplomats were sent in unofficial capacity

② Coordinate with Russia which is playing a major role in bringing normalcy

③ Goodwill gestures like Developmental Aid, more infrastructure development

India believes in Afghan led, Afghan owned strategy which has become redundant due to rising clout of Taliban

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3. The BRICS as a grouping seems to have internal contradictions, which makes it difficult for it to emerge as an effective forum in a dynamic multi-polar international order. Critically discuss. (150 words) 10

एक समूह के रूप में ब्रिक्स (BRICS) में आंतरिक विरोधाभास विद्यमान प्रतीत होते हैं, जो गतिशील बहु-ध्रुवीय अंतर्राष्ट्रीय व्यवस्था में इसके एक प्रभावी मंच के रूप में उभरने को कठिन बनाता है। समालोचनात्मक चर्चा कीजिए।

BRICS is a grouping of 5 major economies of the world - Brazil, Russia, India, China and South Africa. The acronym was coined by a Goldman-Sachs analyst.

Internal contradictions that are present in BRICS.

① India - China relationship is marked by continuos strains which affect the grouping. For eg.

a) BRI (Belt and Road Initiative) not endorsed by India.

b) Boundary Disputes in Jammu & Kashmir and Arunachal Pradesh.

② The countries are vastly separated by distance to have profitable trade and coordination - For eg. South America,

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Europe, Asia and Africa. 4 Continents in 5 country grouping.

(3) Inter country trade (except China) is minimal

(4) Due to distance, geopolitical situation in does not adversely affect other countries
- Brazil's own problems does not affect China or India.

(5) Vast difference. China is a behemoth (vs Brazil, South Africa)
However, it has various achievements.

(1) New Development Bank (NDB) set up.
Highly successful, India is the largest borrower

(2) Contingent Reserve Agreement (CRA) to decrease dependency on Western Institution like IMF.

(3) Strategic Partnerships are being endorsed

(4) Annual Summits take place which are largely successful.

BRICS, though challenged by severe contradictions. Remains one of the most successful and stable grouping.

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4. Despite India having immense soft power potential, it alone will not be sufficient to achieve India's foreign policy objectives. Examine.

(150 words) 10

भारत के पास अत्यधिक मृदु शक्ति (सॉफ्ट पॉवर) क्षमता होने के बावजूद, केवल यह भारत की विदेश नीति के उद्देश्यों की प्राप्ति हेतु पर्याप्त नहीं होगी। परीक्षण कीजिए।

Soft Power is defined as a tool of diplomacy which tends to promote coordination between countries through cultural, religious, traditional, non military ties.

Immense Indian soft power

i) Yoga being celebrated worldwide.

ii) Hindi is used in many countries

iii) Largest diaspora (World Migration Report - UN)

iv) Buddhism → SE Asia, Japan

v) Hinduism : in Nepal etc.

vi) ethnicity - with Sri Lanka (Tamilian)

How it alone can not be sufficient

① China gaining access to countries like

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Nepal, Srilanka (Hambantota), Mauritius (GMR Contract cancelled)

② Africa - neo colonialism - heavy investment and corruption by various countries. India keeps showering good-will gestures. Eg. Girinka program in Rwanda.

③ Bus Diplomacy with Pakistan resulted in Terrorist attacks. Same with Aman Ki Asha gesture.

Many political scientists are of the view that soft power works but it works only when the real power (real politik) is in place. Thus, India is maintaining such actions

i) Duqm port in Oman.
ii) Changi Air base in Singapore
iii) Malabar exercise, Maitrie exercise.
iv) Competitive bidding & aid is supplied to under developed countries

Both Soft Power & Realism have to work in tandem to provide inertia to Indian elephant.

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5. Highlighting the role of space technology in border management, enumerate the steps taken so far in this regard. (150 words) 10

सीमा प्रबंधन में अंतरिक्ष प्रौद्योगिकी की भूमिका पर प्रकाश डालते हुए, इस संबंध में अब तक उठाए गए कदमों को सूचीबद्ध कीजिए।

Space Technology has various uses in various sectors of a nation. Border management is one such sector

How Space Technology helps:-

① It can be used to clearly demarcate boundaries. establishing International borders.

② It can be used to target drug trafficking, arms trafficking using hyper spectral satellites, thermal cameras.

③ It works as an 'eye in the sky' to keep an active check on movement of troops, geography, mines etc

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Steps that have been taken.

① CARTOSAT 1, CARTOSAT-2 - launched by ISRO (PSLVs) - High resolution satellites (< 1m, < 0.8m respectively). Can help in demarcation.

② EMISAT: recently launched through PSLV C45 - first military intelligence satellite.

③ HySIS - PSLV C43 - can help in finding any mines, tunnel openings.

④ IRNSS - NaVIC - range extends beyond our neighbors - 'works as eye in the sky'

⑤ Other satellites like RISAT, GSAT 7, 7A help in coordination, communication between armed forces

After being denied the usage of GPS by US in Kargil War. Indian Space Programme has come a long way in self sufficiency.

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6. Despite allegations of human rights violations under the AFSPA, it is a functional requirement for the army in disturbed areas. Critically discuss. **(150 words) 10**

AFSPA के अंतर्गत मानवाधिकारों के उल्लंघन के आरोपों के बावजूद, यह अशांत क्षेत्रों में सेना के लिए एक कार्यात्मक आवश्यकता है। समालोचनात्मक चर्चा कीजिए।

Armed Forces Special Powers Act ~~Amendment~~ (1958) gives the members of the Armed Forces and Police extraordinary powers to search without warrant, kill after due warning, arrest without warrant etc.

It is accused of severe Human Rights violation

① Justice Verma Committee (post 2016 Delhi Rape Case), Jeevan Reddy Committee pointed out how it is used to molest, rape and argued for dilution if not removal.

② Supreme Court in one of its judgement also highlighted the misuse and ruled that all arrests, killings to be deeply enquired into.

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(3) Various movements against the act.
a) T Manorama rape and killing in ~~Manip~~ Manipur.
b) Protests by Naga women in nude against Rapes and molestations
c) Resent in Kashmiri Youth lead to alienation

However, it is needed for the reasons
(1) They are severely affected areas infested by terrorists and not petty criminals. Thus, quick action is required
(2) Several army generals have defended its usage – presence of heavy mines, assault rifles, require instant reaction

Way Forward
i) Army should be sensitised – Differentiate between enemy and family (Indians).
ii) Strict punishment in molestation, undue torture, indiscriminate killing in line with Supreme Court judgement and Verma Committee recommendation

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7. The use of Internet creates both challenges and opportunities in the fight against terrorism. Discuss. **(150 words) 10**

आतंकवाद के विरूद्ध लड़ाई में इंटरनेट का उपयोग चुनौतियां और अवसर दोनों सृजित करता है। चर्चा कीजिए।

Internet is a web of computer and mobile devices across the globe marked by a free flow of information and connectivity.

Challenges in dealing with Terrorism

① Intelligence Bureau reports how Internet & Social Media Facebook etc being used for radicalisation of youth, recruitment in terrorist organisation like ISIS etc.

② Lone Wolf attacks are being popularised as terrorist handlers give directions to radicalised youth via social media

③ Emergence of black market (deep net) - 'The Silk Route' - a site on black Internet

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- extensively used for Arms Trade etc.

(4) Internet phones are used for giving cross country directions to terrorist

(5) Over the Top internet based applications
- WhatsApp, Telegram → encrypted chats
- Intelligence Nightmare.

Opportunities

(1) Inter agency coordination and intelligence dissemination has become much easier with Internet.

(2) Terrorists or radicalised youth can be effectively tracked through Internet connection.

Internet, thus presents a unique condition wherein it helps propagate as well as control terrorism

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8. Explain the concept of Chandrasekhar Limit and highlight its significance in the field of astronomy. **(150 words) 10**

चंद्रशेखर सीमा की अवधारणा की व्याख्या कीजिए और खगोल विज्ञान के क्षेत्र में इसके महत्व पर प्रकाश डालिए।

Chandrasekhar Limit is the limit of the mass of the White Dwarf Star beyond which it cannot sustain and would become a Blackhole. Mathematically, it is described as $\boxed{1.4M}$, where M is the mass of the Sun.

Significance in the field of Astronomy

① It serves as the starting point for the researchers to be able to $\boxed{\text{observe}}$ - a blackhole, which is marked by event horizon - boundary of blackhole. Recently, Event Horizon Telescope observed a blackhole using Chandrasekhar limit

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(2) The future holds for time space warping as a means for transportation wherein light years can be traversed by humans. The Chandrasekhar limit helps us identify the limit of warping of Space-Time Fabric.

(3) It is useful for observing Pulsar Stars, Neutron Stars, White Dwarfs.

(4) Gravitational Waves (LIGO) are a unique phenomena linked to Neutron Stars and Blackhole. The Chandrasekhar limit helps us identify the source of such Gravitational waves

The contribution of Dr. Chandrasekhar in field of Astronomy is unparalleled

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9. Examining the risk posed by space debris, suggest some measures which can be taken for its mitigation and removal. (150 words) 10

अंतरिक्ष में मलबे द्वारा उत्पन्न जोखिम का परीक्षण करते हुए, इनके शमन एवं हटाने हेतु कुछ उपायों का सुझाव दीजिए।

Space Debris is defined as useless matter both natural (meteors) as well as artifical (destroyed or dysfunctional satellite) that orbits the Earth (especially Low Earth Orbit)

Risks posed by Space Debris

① Hypotheised Kessler's Syndrome marked by a chain reaction of Space Debris colliding with one another resulting into destruction of all satellites.

② It can severely harm communication systems, internet, financial system, disaster management activity etc.

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(5) Present era is marked by Space Arms Race. China in its Technology Demonstration (2007 - Anti Satellite) - destroyed one of its own satellite.

(4) Militarisation and weaponisation of space add to the risk

Steps taken:

(1) University of Surrey, UK has a flagship programme. (Remove Debris) marked by (1) Harpoon Capture (2) Net Fencing (3) Dragging the satellite eventually burning it in the Thermosphere.

(2) India also showcased its ability in net capture and burning the debris in Thermosphere.

Space Debris is a huge risk and there needs to be effective implementation of Prevention of Arms race in Space Treaty (PAROS).

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10. Discuss the challenges confronting higher self-reliance and indigenisation of defence industry in India. What steps can be taken to accelerate its pace? **(150 words) 10**

भारत में रक्षा उद्योग के समक्ष उच्च आत्म-निर्भरता और स्वदेशीकरण से संबद्ध चुनौतियों की विवेचना कीजिए। इसकी गति को तीव्र करने हेतु क्या कदम उठाए जा सकते हैं?

India is the second largest defence importer and 70% of its defence needs are met by imports.

Challenges in self reliance and indigenisation

① Inability to take the advantage of private sector due to:
   a) Trust Deficit
   b) Reservation for Public Sector

② Lack of Innovation and Research in the country. Only 0.7% of the GDP goes in Research.

③ Research heavily done solely by public sector. Monopoly of public sector.

④ Political will has been absent. Defence Deals - eg. Bofors marked by high corruption

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(5) Lack of effective policies.

Steps to be taken

(1) Effective implementation of Defence Procurement Policy (DPP'2016).

Make II procedure - active involvement of private sector

(2) Diversify the Strategic Partership Model.

(3) Increase FDI through automatic route from 49% to 74%.

(4) Defence Corridors (UP & Tamil Nadu) be made functional and effective

(5) Ignite spirit of Research especially amongst the youth (INSPIRE, Atal Innovation Mission, Defence Expo visit)

Government is taking active step towards indigenisation which will lower the costs, decrease dollar bill and kickstart research & provide employment

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11. Comment on the role played by the diaspora in India's development process. Also, discuss the challenges in terms of engaging the Indian diaspora and suggest ways to translate these partnerships into benefits.
(250 words) 15

भारत की विकास प्रक्रिया में प्रवासी समुदाय (डायस्पोरा) द्वारा निभाई गई भूमिका पर टिप्पणी कीजिए। साथ ही, भारतीय प्रवासी समुदाय को आकर्षित करने में आने वाली चुनौतियों पर चर्चा कीजिए तथा इन साझेदारियों को लाभों में बदलने हेतु तरीके सुझाइए।

World Migration Report 2018 points out the fact that Indians ~~Ro~~ form the largest diaspora in the world. They are mainly concentrated in Arab Countries, USA, Canada, UK

Role played by Indian Diaspora in development

① India remains the largest recipient of remittances in the world.

② Remittance brings the ~~much~~ much needed foreign currency which keeps Rupee depriciation in check.

③ Remittances help in increasing the average household income thus

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pushing many out of poverty.

(5) They act as agents of soft power in many countries.

i) They are drivers of growth of the Gulf Countries. India, thus can never be ignored by them.

ii) USA - presence of highly skilled workers. (H1B)

iii) They are drivers of cultural tolerance and diffusion

Challenges in engaging the diaspora

(1) Brain Drain takes place. The technically advanced leave India never to engage with the country again

(2) Wages in India are much lower than that provided by Western counterparts

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(3) Many of the unlinked diaspora is often engaged in anti India protests eg. Khalistani in Canada, Anti 370 Article protest outside Indian High Commission in Britain

Ways to translate partnership in benefit.

(1) Schemes like VAJRA, GIAN have to be effectively operationalized to ~~gain~~ brain gain the lost skills.

(2) High Commission in various countries have to play proactive role:
i) Diwali, Independence Day Celebration
ii) Help them in dire needs

(3) Pravasi Bharatiya Diwas to be celebrated throughout the world for ~~the~~ diaspora to be proud of their heritage.

(4) OCI, PIO benefits and entitlements to be eased for greater participation

The Indian Diaspora is an asset which needs to be further polished via engagement to reap complete benefit.

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12. Highlight the reasons behind proliferation of multilateral preferential trade agreements. Do they violate WTO's MFN principle? Do you think that such trade groupings present an existential threat to WTO? **(250 words) 15**

बहुपक्षीय अधिमान्य व्यापार समझौतों के तीव्र वृद्धि के पीछे निहित कारणों पर प्रकाश डालिए। क्या वे WTO के MFN सिद्धांत का उल्लंघन करते हैं? क्या आपको ऐसा प्रतीत होता है कि इस प्रकार के व्यापार समूह, WTO के समक्ष अस्तित्वपरक खतरा प्रस्तुत करते हैं?

The recent times have seen a massive proliferation of multilateral preferential trade agreements like RCEP, revised Trans Pacific Partnership etc.

Reasons behind their proliferation

① Exploitation of Comparitive Advantage principle by Ricardo, wherein multiple countries coordinate & exchange services & goods based on their strength & weaknesses.

② Decreasing clout & authority of World Trade Organisation - several failed summits and incomplete trade negotiation rounds

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· MFN principle stands for Most Favored Nation principle wherein a country has to provide the same benefit to all other countries as it is providing to one country. It is marked by non discrimination & free and fair trade.

Yes, the multilateral PTA certainly violate WTO's MFN principle as:-

① They are discriminatory in nature.

② Countries in PTA have a positive list of items (goods & services) which get cheaper access to markets. Whereas, a country without a PTA would face higher custom charges making it uncompetitive.

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Is it an existential threat to WTO?

Argument Against

~~Though~~ ① The multicountry agreements are in consonance with the core principals of WTO i.e. free & fair trade and Non Discrimination.

② The grievance redressal often takes place at WTO only

Argument For

① Present times are marked by deglobalisation and trade is being done at regional level.

② WTO - Too many failed summits & negotiation rounds.

③ Monopoly of developed countries like US

④ Present trade war between US - China

⑤ ASEAN, EU, RCEP - considerable trade & movement of people.

WTO needs urgent reforms to stay relevant in the multipolar world

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13. India needs to balance its growing water needs and larger security concerns with effective hydro-diplomacy. Highlighting the challenges faced with regard to transboundary rivers, analyze this statement in the context of India's riparian relations with its neighbours. (250 words) 15

भारत को अपनी बढ़ती जल आवश्यकताओं और व्यापक सुरक्षा चिंताओं को प्रभावी जल-कूटनीति के माध्यम से संतुलित करने की आवश्यकता है। सीमा पारीय नदियों से संबंधित सामना की जाने वाली चुनौतियों पर प्रकाश डालते हुए, अपने पड़ोसियों के साथ भारत के नदी-जल संबधों के संदर्भ में इस कथन का विश्लेषण कीजिए।

India is marked by several antecedant rivers which are of Himalayan origin and are often cross country rivers.

Challenges faced in transboundary river & water needs

① India Pakistan : marked by the very succesful Indus Water Treaty, 1960. It has continued in times of war and skirmishes. However,

Problems:

① In times of war, popular pressure to not adhere to treaty

② Pakistan has a problem with India constructing dams on Indus's tributaries eg. Kishanganga Dam, Pakal Dul Dam

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(2) India China: Brahmaputra is the main source of water in NE India.

Problems:

(1) Floods - regular floods due to Brahmaputra
(2) Water Data is shared only for monsoon season by China.
(3) Black Cement like material in Brahmaputra → construction of Dam - strategic loss

(3) India Nepal: Rivers like Arun, Kosi ..etc, Kali etc

Problems:

(1) Floods in Bihar.
(2) Increasing engagement of China, dam building

(4) India Bhutan: Hydropower forms the main backbone of economic relations.

Problems (1) big brotherly attitude not accepted by Bhutan.
(2) Increasing role of China.

(5) India Bangladesh: Teesta River dam building

Don't write anything this margin (इस भाग में कुछ ना लिखें)

What needs to be done?

① The theory of 'Jal hai to Jeevan hai' needs to be realised & propagated to our neighbors.

② Confidence building measures to be taken

③ Dams etc should be built only with concensus of lower riparian country (eg. Bangladesh)

④ Renegotiate treaties with Bhutan & Nepal to address their issues.

⑤ Coordinate with China on platforms like SCO, BRICS etc

⑥ Bilateral disputes with Pakistan regarding Indus Water Treaty should be solved at International level (ICJetc)

India would need highly active diplomacy to deal with the future crisis of water in the era of Global Warming.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

14. Commenting on the importance of Central Asia for India, highlight the progress made in the relationship in recent past along with the issues that still remain to further cement the ties. **(250 words) 15**

भारत के लिए मध्य एशिया के महत्व पर टिप्पणी करते हुए, हाल के दिनों में संबंधों में हुई प्रगति पर प्रकाश डालिए, साथ ही साथ ऐसे मुद्दों का उल्लेख कीजिए जिन पर संबंधों को और अधिक सुदृढ़ करने हेतु ध्यान दिया जाना अभी भी शेष है।

Central Asia has gained a lot of importance for India in the recent times. It can be substantiated by:

① Huge presence of Resources in the region:

ⓐ Kazakhstan → huge reservoir of Uranium - for nuclear ~~oil~~ needs.

ⓑ Turkmenistan - Presence of Oil, Natural Gas. eg. TAPI pipeline to supply ~~energy~~ gas to India.

ⓒ Huge reservoirs of Gold in the region.

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② Connectivity

INSTC and Ashgabat Agreement have been signed. This would promote trade and transportation.

③ Strategic Importance.

Farkhor in Tajikistan. Only foreign air base. Close to Pakistan occupied Kashmir.

④ Gateway to Europe: to promote trade ties.

⑤ huge investment opportunities in under developed Central Asia.

⑥ Anti Terrorist Coordination – RATS under SCO Framework

Progress made in the relationship

① ~~Asthana~~ Astana Summit 2017 of Shanghai Cooperation Organisation – India gained entry to the regional grouping.

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(2) Indian leaders have time & again visited Kazakhstan, ~~Kr~~ Kyrgyz Republic, Uzbekistan for Uranium Deal, Strategic Partnership.

(3) TAPI pipeline, Ashgabat Agreement, SCO, INSTC - increasing trade relations

Issues that still remain

(1) Trade is still lacking with the Central Asian Countries

(2) Such countries are marked by political instability and terrorism.
- Resource curse.

(3) Increasing presence of China.

(4) Organisations like SCO seen as a Anti-US Front.

(5) Lack of NSG Membership - roadblock to nuclear deals

(6) India is not geographically connected to Central Asian Region.

Despite challenges, Central Asian Region will emerge as a major asset of India's trade & commerce.

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15. Discuss the significance of India's island territories in its quest to become a net security provider in the Indian Ocean region. **(250 words) 15**

हिंद महासागर क्षेत्र में वास्तविक सुरक्षा प्रदाता बनने की भारत की आकांक्षा के आलोक में, इसके द्वीपीय प्रदेशों के महत्व की चर्चा कीजिए।

India has 2 major island territories which are highly significant in terms of strategic importance.

I. Andaman & Nicobar Islands

- It is the only place where Tri service Command is present.
- It is very close to countries like Indonesia, Malaysia, Singapore.
- Major sealanes - Malacca strait, are very near.
- South China Sea is also in close proximity
- 200 Nautical Mile EEZ → counter to string of Pearl policy of China as

Don't write anything this margin (इस भाग में कुछ ना लिखें)

we can place our Navy over there.
· Various exercises - strategic, HADR etc take place there. eg. Malabar exercise.

II Lakshwadweep Islands

① Can effectively counter China's String of Pearl Policy.

② Lies in close proximity to African Subcontinent and middle east.

III The presence of the Island territories has helped India propagate various grouping like IONS (Indian Ocean Naval Symposium) and IORA (Indian Ocean Rim Association)

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wherein several countries actively coordinate on a strategic front.

IV Several small Islands like Sriharikota in Andhra Pradesh and Wheeler Island in Odisha serves as a launchpad for ISRO and DRDO to improve security.

V Due to Indian Islands, Bay of Bengal is referred to as Indian backyard.

VI Major countries like US, Japan also recognise Indian importance & ~~refer~~ in their policies Asia-Pacific is being replaced by Indo-Pacific.

India has thus due to the Island territories, serve as a major net security provider in the region

Don't write anything this margin (इस भाग में कुछ ना लिखें)

16. A fine balance between security and developmental measures needs to be attained for tackling the menace of Left Wing Extremism (LWE) in India. Analyse. **(250 words) 15**

भारत में वामपंथी उग्रवाद (LWE) के खतरे से निपटने हेतु सुरक्षा और विकासात्मक उपायों के मध्य एक उत्कृष्ट संतुलन स्थापित करने की आवश्यकता है। विश्लेषण कीजिए।

LWE (Left Wing Extremism) is present in close to 88 districts in the country marked by 10 states represented by the infamous red corridor.

Tackling LWE.

It requires a fine balance of security & developmental measures:-

SECURITY

① Operation Greenhunt → to mark, locate and eliminate naxalites who routinely terrorise people

② Greyhounds, COBRA of CRPF.

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highly specialised anti naxalite battalions to deal with Naxalites

③ Bastariya Battalion - recruited among the tribes, better knowledge of terrain

④ Surrender schemes - for peaceful surrender and rehabilitation.

DEVELOPMENT

① Schemes like Nai Roshni for providing employment.

② Universal Service Obligation Fund (USOF) mobile net towers are being constructed using the tribal youth.

③ Infrastructure modernization & development. New Roads, bridges are increasingly being constructed

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(4) Modernization of Police Force scheme - for being able to deal with the youth in a peaceful way.

(5) Recruitment of local youth in the forces.

(6) Perception change is being promoted

The present Government's SAMADHAN Strategy is a amalgation of developmental as well as security measures aimed at changed perception, active rehabilitation and strict action towards anti establishment killers.

~~It is~~ The SAMADHAN Strategy is complemented by SMART police strategy

Don't write anything this margin (इस भाग में कुछ ना लिखें)

17. Illustrate the linkages between drug trafficking, organised crime and terrorism. In this regard, mention the steps that have been taken to arrest the availability of drugs in India. **(250 words) 15**

मादक पदार्थों की तस्करी, संगठित अपराध और आतंकवाद के मध्य संबंधों को उदाहरण प्रस्तुत करते हुए समझाइए। इस संबंध में, भारत में मादक पदार्थों की उपलब्धता पर अंकुश लगाने हेतु उठाए गए कदमों का उल्लेख कीजिए।

The activities of drug trafficking, organised crime and terrorism are highly interwoven and interdependent.

① India is bound by the Golden Crescent (Pakistan, Iran and Afghanistan) on West and Golden Triangle (Myanmar, Thailand, Laos) on East. They are the hotbeds of drug trafficking. India → Moreh in Manipur and Punjab and Kashmir are used as exchange points. These areas are marked by increased terrorism, secessationism and extremism. eg. Khalistan movement,

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Kashmir insurgency, Naga insurgency.

(2) Similarly, Pakistan, Nepal are the hotbed of counterfeit currency. It is used to spread financial terrorism aimed at toppling the economy of a country

(3) Terrorism and Drugs is also linked with Child and women trafficking. Children are radicalised, enslaved to drugs. Girl Childs are drugged, hormone injection → pushed into prostitution for money.

(4) Hawala and Terrorism have deep ties as hawala money is from Gulf countries with ISI handlers is used to fund terrorism in India

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Steps taken to arrest availability of Drugs

① Narcotic Drugs and Psychotrophic Substances Act (NDPS Act) - regulates and controls the availability of drugs. Strict punishments.
Institutional Mechanism - Anti Narcotics Bureau has been set up.

② Border Check Posts have been strengthened - Strict searches by sniffer dogs

③ Comprehensive Integrated Border Management System (CIBMS) - use of sensors etc to check underground tunnels used for drug trafficking, arrest peddlers.

④ Use of Social Capital - 'eyes and ear campaign' by Delhi Police.

⑤ Underground market (Dark Net) being actively monitored by CERT IN.

Drugs are a menace to society & have security angle as well

Don't write anything this margin (इस भाग में कुछ ना लिखें)

18. Identify the key threats to national security in the wake of climate change. Also, highlight India's stand and rationale on UN's decision to declare climate change as an international security issue. **(250 words) 15**

जलवायु परिवर्तन के आलोक में राष्ट्रीय सुरक्षा के सम्मुख प्रमुख खतरों की पहचान कीजिए। साथ ही, जलवायु परिवर्तन को एक अंतर्राष्ट्रीय सुरक्षा मुद्दा घोषित करने के संयुक्त राष्ट्र के निर्णय पर भारत के दृष्टिकोण और औचित्य पर भी प्रकाश डालिए।

Key threats to national security in wake of climate change:-

① Rivers will run dry by the end of the century by ICIMOD data on Himalayan-Hindu Kush mountain. Upper Riparian countries will construct dams to capture water's security problem.

② Neighbour Island countries like Sri Lanka, Maldives and Mauritius - first to be submerged under water. Issue of Climate Change Migrant - lead

Don't write anything this margin (इस भाग में कुछ ना लिखें)

to change in demography & resentment

(3) Neighboring country refugees from Myanmar (Rohingayes), Bangladeshis would enter India in search of water, food, economic opportunities

(4) Climate change would adversely affect crop production. It would lead to decreased food resources and high population. Internal Security Risk.

(5) More extreme events would lead to resource scarcity and movement of people. Thus aggravating security risks

India's stand and rationale to UN's decision to declare Climate Change as an International security issue

(PTO)

Don't write anything this margin (इस भाग में कुछ ना लिखें)

While India thoroughly supports the fight against climate change, it is against the UN decision.

Rationale:

① It is not the right platform to discuss the issue. There are institutional mechanism of UNFCCC to discuss it.

② UN is hegemonied by developed countries and they would mould the negotiation in their own favour.

③ Presence of UNSC and its infamous veto power, would not let a consensus emerge.

④ Countries like US having bagged down from Paris Climate Agreement can't be trusted as a powerful member of UNSC negotiating on climate change. Climate change is certainly a security emergency & needs to be tackled

Don't write anything this margin (इस भाग में कुछ ना लिखें)

19. Explaining the concept of data exclusivity, bring out the arguments for and against incorporating data exclusivity norms in India's IPR regime.

(250 words) 15

डेटा एक्सक्लूसिविटी (डेटा विशिष्टता) की अवधारणा की व्याख्या करते हुए, भारत की IPR व्यवस्था में डेटा एक्सक्लूसिविटी संबंधी मानदंडों को सम्मिलित करने के पक्ष और विपक्ष में तर्क प्रस्तुत कीजिए।

Data exclusivity refers to a regime wherein data related to a particular pharmaceutical preparation company which is being manufactured & used outside a country, when to be introduced in a new country has to undergo severe new trials of the drug and the old data of another country can not be used.

Effect on IPR Regime

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Arguments against

① It will increase the cost of the drug

② It will increase the time to be taken to put the drug in use

③ Issue of clinical trials - people mostly belong to poor socio economic conditions.

④ India - highly efficient pharmaceutical hub would be severely affected

Arguments For

① It will be in consonance with global practices.

② It will increase indigenous innovation inside the country

Don't write anything this margin (इस भाग में कुछ ना लिखें)

- India is infamous for Compulsary Licensing, Jan Aushadhi Drugs which use same Active Pharmaceutical Formula without trial.

③ Increase health of country. Different effect on different nationalities, races.

Data exclusivity is essentially a Western development to protect the hegemony of behemoths like Bayer etc over expensive drugs

Don't write anything this margin (इस भाग में कुछ ना लिखें)

20. Compare and contrast fifth generation (5G) of wireless telecom technology with 4G technology. What challenges need to be overcome for 5G's pan-India rollout? **(250 words) 15**

4G प्रौद्योगिकी के साथ पांचवी पीढ़ी (5G) की वायरलेस दूरसंचार तकनीक की तुलना कीजिए और उनके मध्य अंतर बताइए। 5G के अखिल भारतीय क्रियान्वयन हेतु किन चुनौतियों से निपटने की आवश्यकता है?

4G	5G
① Latency of the order 10ms. (time taken to send a data packet)	① latency of the order <1ms.
② Bitrate - 1Gpps maximum	② Bitrate upto 20 ~~Gp~~ Gbps
③ 100,000 simultaneous connections	③ Upto a million (1,000,000) simultaneous connection
④ Spectrum of just 3 GHz	④ Spectrum is of 30 GHz

Don't write anything this margin (इस भाग में कुछ ना लिखें)

(5) Mostly based on Radio frequency backhaul	(5) To be based on fibre optic backhaul network
(6) Packet loss - relatively large	(6) Packet loss - relatively low

Challenges that need to be overcome

(1) Backhaul network - 5G requires fibre optic backhaul to support it which is not fully present in India

(2) Issue of Investment : 5G requires atleast € 70 Billion Dollars of Investment.

(3) Spectrum Price and Allocation.
Spectrum Price in India is among the highest in the world and is marked by high level of corruption

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accumulation (2G Scam & Coal)

④ China Angle: Huawei (banned in US) is a strong contender for backhaul network. Giving access to a company from adversary country can have security issue.

⑤ Issue of Cybersecurity: Symantec Report. India is 3rd most vulnerable country to cyberattack.

5G presents a unique opportunity in the presence of 4th Industrial Revolution marked by Artificial Intelligence, Internet of Things that can further India's status as a knowledge economy